

**AMENDMENTS TO THE CLAIMS**

This listing of claims replaces all prior versions of claims in the application.

1. (Currently amended): A plasma monitoring device comprising:  
  
at least an electroconductive supporting member having an opening formed on at least a part of a surface thereof facing to plasma; and  
  
a dielectric member having a probe electrode formed on one side thereof positioned at the opening of the electroconductive supporting member, wherein the probe electrode is made of an optically transparent electroconductive substance, and the probe electrode covers the dielectric member except a peripheral area of the dielectric member.
  
2. (Previously presented): The plasma monitoring device according to claim 1, further comprising an impedance matching unit connected to the probe electrode.
  
3. (Previously presented): The plasma monitoring device according to claim 1, wherein the dielectric member is made from an optically transparent glass.
  
4. (Cancelled).

5. (Previously presented): The plasma monitoring device according to claim 1, wherein the opening formed on the electroconductive supporting member has a function of a viewing port.

6. (Previously presented): The plasma monitoring device according to claim 1, further comprising a voltage waveform measuring unit for measuring a voltage waveform disposed at an output end of the probe electrode.

7. (Previously presented): The plasma monitoring device according to claim 6, further comprising a process monitoring mechanism for detecting a stability of plasma by detecting a degree of nonuniformity among cyclical waveform changes of the voltage waveform detected by the voltage waveform measuring unit.

8. (Previously presented): The plasma monitoring device according to claim 6, comprising an anomalous discharge monitoring mechanism for detecting anomalous discharge of plasma from the changes in voltage waveform detected by the voltage waveform measuring unit.

9. (Previously presented): The plasma monitoring device defined in claim 6, wherein the plasma monitoring device is mounted on a plasma processing apparatus.

Amendment under 37 CFR §1.116

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10. (Previously presented): The plasma monitoring device according to claim 9, wherein the electroconductive supporting member provided with the opening is a flange constituting a viewing port of a reaction vessel, and the dielectric member is a transparent glass plate for sealing the flange.

11. (Previously presented): The plasma monitoring device according to claim 1, further comprising an electromagnetic shielding member for shielding the probe electrode.

12. (Previously presented): The plasma monitoring device according to claim 11, wherein the electromagnetic shielding member is made from an optically transparent electroconductive substance.